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Ref: 8EPR-N

Dana Wilson, Acting Field Manager
Uncompahgre Field Office
Bureau of Land Management
Attn: Gina Jones, NEPA Coordinator
2465 S. Townsend Avenue
Montrose, Colorado 81401

RE: Uncompahgre Field Office Draft RMP/EIS, **CEQ #20160118**

Dear Ms. Wilson:

The U.S. Environmental Protection Agency Region 8 has reviewed the May 2016 Draft Resource Management Plan (RMP) and Environmental Impact Statement (EIS) prepared by the Bureau of Land Management for the Uncompahgre Field Office (UFO). The Draft EIS is intended to analyze impacts associated with the BLM's long-range decisions concerning the use and management of resources in the UFO RMP planning area. Our comments are provided for your consideration pursuant to our responsibilities and authority under Section 102(2)(C) of the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act (CAA).

Background

The UFO planning area consists of approximately 3.1 million acres in southwestern Colorado and includes BLM, U.S. Forest Service (USFS), National Park Service, Bureau of Reclamation, state and private lands in Delta, Gunnison, Mesa, Montrose, Ouray, and San Miguel Counties. Of this large planning area, about 675,800 surface acres and 971,000 mineral acres are administered by the BLM. If approved, the new RMP will replace applicable portions of the BLM's San Juan/San Miguel Planning Area RMP (1985) and the entire Uncompahgre Basin RMP (1989a).

Alternatives identified in the Draft RMP/EIS include: Alternative A (No Action), Alternative B (emphasis on improving and restoring resources), Alternative B.1 (resource-based partial alternative developed from recommendations provided by a community group and specific to oil and gas leasing/development in the North Fork and Smith Fork drainages of the Gunnison River – referred to as the "North Fork Area"), Alternative C (emphasis on maximizing resource uses), and Alternative D – the BLM's Preferred Alternative (emphasis on balancing resource conservation and resource use among competing interests).

The EPA's Comments and Recommendations

Based on the EPA's review of the Draft RMP/EIS, an overarching observation is that much of the existing conditions information is dated. For example, some of the discussion under the Affected Environment sections for air, water, and energy resources rely on data that are 5-9 years old. An accurate representation of existing conditions is prerequisite to the ability to assess future impacts. We recommend updating the existing conditions information, including the maps, for the Final RMP/EIS and providing an explanation for any older data that the BLM considers representative of current conditions.

It appears that many aspects of the draft analysis are responsive to the EPA's recommendations provided in our April 5, 2010 scoping letter. Given potential energy development over the Draft RMP's 15-20 year planning horizon and the high value air and water resources of the area, the EPA is interested in the BLM's approach to ensuring protection of these valuable resources. The EPA's remaining recommendations are intended to further inform the decision to be made and the public's understanding of potential impacts to public health and the environment.

The EPA's specific comments and recommendations pertain to the following issues: (1) air resources and climate change; (2) solid leasable minerals – coal; (3) groundwater resources; (4) surface water resources; (5) public drinking water supply sources; (6) water management and water resource monitoring; and (7) wetlands, riparian areas and floodplains. These issues serve as the basis for the EPA's EC-2 rating discussed at the conclusion of this letter.

1. Air Resources and Climate Change

Air Quality Analyses and Disclosure of Potential Impacts

The Draft RMP/EIS relies on the Colorado Air Resources Management Modeling Study (CARMMS) for far-field and regional air quality impacts, and focuses exclusively on the CARMMS high scenario for the UFO planning area. Although a primary purpose of NEPA is to enable the decision-maker and the public to understand the potential impacts of the alternatives analyzed, the air quality impacts (both detriments and benefits) of each of the alternatives are not identified in the Draft RMP/EIS. Further, it is unclear whether the CARMMS scenarios are representative of the level(s) of development being analyzed for this action because the CARMMS scenarios do not directly align with each project alternative, and the Draft RMP/EIS does not explain how the model scenarios are associated with the alternatives for the UFO planning area. As a result, the decision-maker and the public may not be sufficiently informed regarding air quality impacts associated with the alternatives' varying levels of development over the full planning horizon.

We recommend that the analysis be amended to include results from the low and medium CARMMS scenarios, and to the extent possible, the analysis explain how those impacts could be interpreted with regard to each of the Draft RMP/EIS alternatives. We recommend that comparisons of impacts be made between the alternatives and not between base-year and future-year model results alone.

We also recommend considering whether the selected future year of 2021 is still representative or needs

to be updated given that it is only 5 years from the date of this Draft EIS. For NEPA purposes, we recommend that the analysis of the cumulative impacts be based on the maximum emission year during the RMP planning horizon of about 15-20 years. The appendices to the June 2011 MOU for Air Quality Analyses and Mitigation for Federal Oil and Gas Decisions through NEPA (AQ MOU) include an example that could be adapted for use with a reusable modeling framework such as CARMMS. This example emphasizes the importance of designing future year projections "to examine the potential for maximum growth in the planning area." At a minimum, we recommend that the Final RMP/EIS update current conditions with the most recently available information for the planning area counties, and then update the analysis to highlight any significant differences in air quality impacts between the alternatives.

Greenhouse Gas (GHG) Emissions and Climate Change

While the Draft RMP/EIS includes the direct and indirect emissions associated with the proposed activities and alternatives within the planning area, further clarification around the coal production assumptions is needed to ensure the estimates are reasonable. For example, given the projected continued decline in demand for coal, the BLM's assumption in the Draft EIS that coal mine production will remain unchanged from the base year (2008) and any existing mine production will be replaced by production from future mine development in the area may greatly overestimate associated GHG emissions. In addition, further clarification is needed on the source of information for the BLM's estimate of the current maximum expected production rate of approximately 11 million metric tons per year, versus the current permitted rates used for the direct emissions analysis. Given this RMP covers the same North Fork Area recently analyzed under the USFS's Colorado Roadless Rule EIS,[1] we recommend the BLM consider this analysis and incorporate relevant information regarding a range of potential future coal production scenarios and their associated direct and indirect GHG emissions into the Final RMP/EIS.

As mentioned earlier, the Draft RMP/EIS relies on the CARMMS for calculating indirect emissions, and focuses exclusively on the CARMMS high scenario for the UFO planning area. Therefore, we recommend that the Final RMP/EIS utilize the low and medium CARMMS scenarios to provide a reasonable range of indirect GHG emissions and explain to the decision-maker and the public how those impacts could be interpreted with regard to each of the Draft RMP/EIS alternatives.

In the Draft RMP/EIS, the BLM compares the proposal's estimated GHG emissions to U.S. and Colorado Statewide GHG emission levels. Such comparisons are "not an appropriate method for characterizing the potential impacts associated with a proposed action and its alternatives and

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[1] Colorado Roadless Rule Website: http://www.fs.usda.gov/wps/portal/fsinternet/!ut/p/c4/04_SB8K8xLLM9MSSzPy8xBz9CP0os3gDfxMDT8MwRydLA1cj72BTFzMTAwjQL8h2VAQAJp-nEg!!/?ss=119930&navtype=BROWSEBYSUBJECT&cid=null&navid=111000000000000&pnavid=null&position=BROWSEBYSUBJECT&ttype=roadmain&pname=Roadless-%2520Colorado%2520Roadless%2520Rule

mitigations because this approach does not reveal anything beyond the nature of the climate change itself: the fact that diverse individual sources of emissions each make a relatively small addition to global atmospheric GHG concentrations that collectively have a large impact."[2] EPA recommends that BLM follow the approach outlined by the CEQ's GHG Guidance regarding the analysis of GHG emissions and climate change.

The Draft RMP/EIS incorrectly states that "the tools to analyze or predict how global or regional climate systems may be affected by a particular activity or activities within the planning area are not currently available." In addition, BLM inappropriately references conclusions from a 2008 modeled source to determine that activities under the UFO planning area would have no measureable impact on the climate. We recommend removing these statements and instead refer to CEQ's GHG Guidance for how to analyze climate change impacts.

2. Solid Leasable Minerals – Coal

Acres Proposed as Acceptable for Coal Leasing

The Draft RMP alternatives appear to substantially increase the amount of acres available for coal leasing (e.g., the 145,270 acres currently acceptable would be increased to 374,450 acres under the Preferred Alternative D) without explaining the change in management emphasis. Such an increase in available acreage would have inherent resource impacts at the development stage, including potential air and water resources impacts associated with developing or expanding a mine in areas with limited previous commercial coal mining. Perhaps most importantly, the Draft RMP/EIS does not identify which coal fields have high levels of methane that would be vented prior to and during mining.

Coal demand is currently at low levels, and a number of energy market analysts predict a continuing decline in demand. In September 2016, Tri-State Generation and Transmission Association announced that its Nucla Station will be retired by the end of 2022. Coal for this power plant is supplied by the one operating coal mine in the Nucla-Naturita coal field. Accordingly, we recommend that the Final RMP/EIS assess whether coal demand in the Nucla-Naturita coal field will be short term and whether the amount of coal needed through 2022 may already be covered by existing leases.

Further, the coal technical report[3] prepared for the Draft RMP/EIS identified areas with potential for coal development during the plan life. The conclusions of the report include no expectation of commercial mining for the Tongue Mesa or Grand Mesa coalfields over the next 20 years (p. 59). In addition, the Draft RMP/EIS alternatives propose a new area for coal leasing in the Dakota Formation west of Montrose even though, according to the report, this area appears to have poor prospects for commercial mining.

With the above issues in mind, we recommend that the Draft RMP/EIS alternatives be revised regarding acreage proposed for coal leasing in order to reflect the predicted potential for development and

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[2] CEQ Guidance, p.11.

[3] Coal Resource and Development Potential Report, Uncompahgre Field Office, Colorado, April 2010

anticipated market conditions for the planning horizon of the RMP (i.e., 15-20 years). To reflect changes in coal demand, specifically, we recommend that the Preferred Alternative be revised as follows: reduce the acreage available for leasing in the Nucla-Naturita field to the amount of coal needed to continue operating the power plant until 2022; delete available leasing for the Tongue Mesa and Grand Mesa coal fields due to the lack of commercial scale mining anticipated over the planning horizon of this analysis; and delete the proposed acreage acceptable for coal leasing in the area of the Dakota Formation west of Montrose due to poor prospects for commercial mining over the next 15-20 years. These changes to the Preferred Alternative would help to limit the potential for air and water resources impacts resulting from project-level development. Should coal market conditions dramatically change, the decision to open any of these areas to coal leasing should be more fully analyzed with a site-specific environmental analysis, including whether these coal fields contain high methane coals and if there could be additional impacts related to accessing, mining and shipping coal from these fields.

If the BLM does not agree with the above recommendation to revise the Preferred Alternative's acreage proposed as acceptable for coal leasing, then it will be important to provide a more detailed rationale for proposing such a large increase over the existing acreage - particularly given the Draft RMP/EIS's prediction of lack of commercial mining interest in certain areas over the planning horizon.

Methane Mitigation Measures

As described in the Draft RMP/EIS and supporting documents, coal leasing and development activities are likely to continue around the existing operations at the Somerset coal field. This coal field is well known for being a gassy formation with substantial GHG emissions of methane. This ongoing issue has been analyzed in a number of the BLM's leasing decision environmental assessments and the USFS's EISs and EAs for exploration activities, vent holes and roads located on USFS land. The majority of methane from these coal mines is vented directly into the atmosphere. We recommend that new leases in this area include stipulations that require the successful lessee to either use or combust a substantial portion of the methane vented from these mines. Given the magnitude of GHG emissions from these uncontrolled vents, if it is not economical to install methane mitigation measures then we recommend not issuing the leases until economic conditions improve sufficiently to make methane reduction feasible.

3. Groundwater Resources

Groundwater Characterization

It is important to characterize both the existing and potential groundwater and drinking water resources in the planning area. We recommend that the Final EIS identify and describe the quality of all groundwater sources that meet both the BLM definition of usable water under Onshore Order No. 2, and those considered underground sources of drinking water (USDW) under the Safe Drinking Water Act (SDWA). Useable waters are "those waters containing up to 10,000 ppm of total dissolved solids" which must be reported, protected and/or isolated under BLM Onshore Order No. 2; these aquifers are also considered Underground Sources of Drinking Water (USDW) if their total dissolved solids (TDS) concentrations are < 10,000 mg/L. As such, these USDWs are subject to protection under the SDWA

unless an aquifer exemption has been granted.

One option to address this recommendation is to provide a set of stratigraphic column diagrams representative of the planning area that includes those formations containing mineral resources and all aquifers and water-bearing intervals. We recommend including additional information regarding water quality (TDS) and whether or not the groundwater may be considered useable or USDW. It would also be informative to describe what (if any) current use exists for those water bearing zones.

We note that Figure 3-8, displaying the major geologic structures, is helpful. We recommend that the Final RMP/EIS map include all known geologic structures (i.e., faults and fractures) to further inform well placement at the project level and to avoid structures that are more likely to act as conduits for deeper fluid flow into shallower aquifers. Please also include the outline of the Piceance Basin Province, not just the structural boundary.

We would welcome the opportunity to discuss these recommendations further with you and/or the BLM Colorado State Office Hydrogeologist, if desired.

Mitigation for Impacts from Resource Extraction

Potential impacts to groundwater quality and quantity from resource extraction, such as mining and oil and gas production, are of concern in the planning area, including those associated with the following: leaks and spills; production and disposal of produced water or processing waters; use of pits, underground injection control (UIC) wells, infiltration basins and evaporation ponds; production wellbore integrity; closure requirements; pipeline use; and impacts associated with restimulation and abandonment of existing wells. The BLM's Preferred Alternative D includes leasing stipulations that will address some of these groundwater concerns. For example, No Leasing (NL) and Controlled Surface Use (CSU) stipulations are identified to protect groundwater wells and springs used in Public Water Supply systems. In addition, Alternative D includes a No Surface Occupancy (NSO) leasing stipulation that requires a 500 foot buffer from occupied dwellings – which by default would protect the associated domestic water wells in those areas. We support these measures.

In addition, the EPA recommends that the Final RMP/EIS include the following:

- A mitigation plan for remediating future unanticipated impacts to drinking water wells, such as requiring the operator to remedy those impacts through treatment, replacement or other appropriate means.
- A general production wellbore diagram and discussion to demonstrate how near-surface and deeper useable waters will be isolated and protected from fluid migration that may occur during oil and gas development activities. At a minimum, current Colorado Oil and Gas Conservation Commission (COGCC) protections for groundwater resources should be implemented. Specifically, we recommend that a discussion of the requirements of COGCC Rule 317, most recently updated on March 16, 2016, be included in the Final RMP/EIS. These requirements apply wherever "freshwater" groundwater sources exist (as described by COGCC Rule 317). In addition, we suggest requiring disclosure of all chemicals introduced to the wellbore (including

maintenance chemicals) used at well pads to inform response decisions in the event of a spill or other impact.

- Abandonment procedures for sealing wells no longer in use in order to reduce the potential for inactive wells to serve as the conduits for fluid movement between production zone(s) and aquifer(s). This is particularly important where existing wells do not have surface casing set into the base of USDWs and lack sufficient production casing cement.

Lastly, please update the reference to the EPA's hydraulic fracturing study (p. 4-83). While the original draft concluded that no "widespread" contamination related to oil and gas exploration was evident, there are scientific studies of groundwater impacts directly related to oil and gas operations in the Piceance Basin, Colorado, and elsewhere. We can provide a list of references if so desired. Please discuss these impacts in the Piceance Basin and what well construction practices will be required to prevent similar groundwater contamination within the planning area.

4. Surface Water Resources

Surface Water Characterization

Draft RMP/EIS Figure 3-10, Hydrologic Units, does not provide the level of detail necessary to understand the existing water resources of the planning area. The EPA recommends the Final RMP/EIS include maps with the following information:

- Water bodies in the planning area, including perennial, intermittent and ephemeral water bodies;
- Using the most recent EPA-approved CWA Section 303(d) list (which is 2016), water body segments classified by the CDPHE as water quality impaired or threatened under the Clean Water Act (CWA) Section 303(d); water bodies considered not impaired by CDPHE, and water bodies that have not yet been assessed by the CDPHE for impairment status. We also recommend that a table be provided to identify the designated uses of water bodies and the specific pollutants of concern, where applicable.

In addition, Tables 3-9 through 3-11 present data from the 2007-2008 timeframe, including some sampling data from 1998-2007. To ensure an adequate representation of existing conditions, we recommend that this information be updated for the Final EIS with the most recent available data. We recommend comparing existing conditions to existing water quality standards or other reference conditions and presenting associated water quality status and trends.

Surface Water Impacts

The Draft RMP/EIS presents information on impaired waterbodies based on the Colorado 2008 CWA Section 303(d) list. We recommend that the Final RMP/EIS address potential impacts to impaired water bodies within and/or downstream of the planning area based on the most recent EPA-approved CWA Section 303(d) list (which is 2016). The BLM should coordinate with CDPHE if there are identified potential impacts to impaired water bodies (in order to avoid causing or contributing to the exceedance of water quality standards). Where a Total Maximum Daily Load (TMDL) exists for impaired waters in

the area of potential impacts, we recommend that pollutant loads from activities on BLM lands comply with the TMDL allocations for point and nonpoint sources. Where new loads or changes in the relationships between point and nonpoint source loads are created, we recommend that the BLM work with CDPHE to revise TMDL documents and develop new allocation scenarios that ensure attainment of water quality standards. Where TMDL analyses for impaired water bodies within, or downstream of, the planning area still need to be developed, we recommend that proposed activities in the drainages of CWA impaired or threatened water bodies be either carefully limited to prevent any worsening of the impairment or avoided where such impacts cannot be prevented.

Erosion and Sediment Load Analysis

As noted in the Draft RMP/EIS, the Mancos Shale Formation, which overlays much of the planning area, often contains high levels of selenium and soluble salts that can degrade water quality in receiving streams and may represent a significant source of pollutants when mobilized by natural and human-caused soil disturbances. Both salinity and selenium yields can be accelerated by the same processes that increase sediment. Depending on a host of variables including soil characteristics, industrial operations and topography, associated runoff could introduce sediments, selenium and salts, as well as heavy metals, radium isotopes, biological pathogens, nutrients and other pollutants into surface waters.

We note that fragile soils such as those with elevated levels of salinity or selenium and/or those prone to erosion have been identified in the planning area. Because sediment loading is already a concern, and future activities (including livestock grazing, oil and gas development, and mining) that may be authorized under this RMP would result in new surface disturbance that may enable erosion, it is important the Final RMP/EIS include information about this issue. To fully disclose and, if necessary, mitigate the potential impacts of soil disturbance, we recommend that the Final RMP/EIS include an estimate of erosion rates and resulting impacts to water quality for each alternative. For example, the Wyoming BLM's Bighorn Basin Draft RMP/EIS estimated erosion rates based on projected amount of surface disturbance, types of surface disturbance and general characteristics of the basin (erodible soils, slopes, etc.). Erosion rates were calculated using the Water Erosion Prediction Project model (WEPP), a web-based interface developed by the U.S. Department of Agriculture, Agricultural Research Service, which can be accessed at http://www.ars.usda.gov/Research/ docs.htm?docid=18084&pf=1. We recommend that the BLM consider using this model or another appropriate model that would be applicable to this planning area.

Surface Water Mitigation

We support the Best Management Practices (BMPs) and Standard Operating Procedures (SOPs) identified in the Draft RMP/EIS Appendix G. In particular, BMPs and SOPs applicable to livestock grazing, roads, oil and gas development, stream crossings, forestry, and travel management should reduce impacts to soils, wetlands/riparian areas and water resources from BLM-authorized activities in the planning area. We recommend augmenting these measures with the EPA's recommendations, described below.

Fluid Minerals Leasing and Other Surface-Disturbing Activities

Contaminants from surface events such as spills, pit and pipeline leaks, and nonpoint source runoff from surface disturbance have the potential to enter and impact surface water resources if these events occur in close proximity to water bodies. If surface activities are set back from the immediate vicinity of surface water, wetlands, and designated source water protection zones, this provides an opportunity for accidental releases to be detected and remediated before impacts reach water resources. If accidental releases are not detected, the setback provides a safety factor and some possibility of natural attenuation occurring. Setbacks also help prevent nonpoint source pollutants such as sediments from impacting surface waters.

The Draft RMP/EIS contemplates a large increase in acreage subject to restrictions applicable to fluid minerals leasing and other surface-disturbing activities as compared to the existing RMPs. The Preferred Alternative D includes NL, NSO, CSU, and Timing Limitation (TL) fluid mineral leasing stipulations and No Ground Disturbance (NGD) and Site-Specific Relocation (SSR) restrictions for other surface-disturbing activities. These measures will be applied at the project level to protect water resources, including public water supplies; major rivers; perennial, intermittent, and ephemeral streams; and riparian areas, fens, springs and wetlands. Taken together, these leasing stipulations and surface-disturbing restrictions represent a significant improvement over the existing requirements, and we encourage you to continue this positive trend in protecting the UFO's valuable water resources.

Some of the BLM's proposed lease stipulations are not completely consistent with the EPA's general recommendations. For example, we generally recommend a minimum 100 foot NSO setback buffer from slopes greater than 30%; a minimum 500 foot NSO setback for flowing waters (rivers and streams) or 100-year floodplain, whichever is greater; a minimum 500 foot NSO setback for lakes, ponds and reservoirs, wetland and riparian areas and springs; and a minimum 750 foot NSO setback for 303(d) impaired waters. With this in mind, we recommend that the BLM's Preferred Alternative incorporate either these EPA recommendations or the stipulations described for Alternatives B/B.1 (which the Draft RMP/EIS describes as being more protective of water resources). In addition, we recommend clarifying Appendix B stipulation CSU-12 regarding protection of hydrology features under Alternative D. The stipulation description notes that CSU restrictions would apply from 325-500 feet of perennial streams, but it does not provide the related distances from intermittent and ephemeral streams; riparian areas, fens, wetlands; and water impoundments.

Locatable Minerals – Uranium

The Draft RMP/EIS notes that there is a high occurrence potential for uranium in the planning area and predicts an increase in uranium extraction and processing over the planning horizon. It is unclear from the Draft RMP/EIS discussion (p. 4-287) which BMPs will be required for uranium exploration and reclamation. We recommend using existing roads to the fullest extent possible and following strict standards for any necessary road construction, stockpiling of topsoil, and sediment basins, similar to those identified in Appendix G., BMPs and SOPs, under the categories of Water, Riparian, Forestry, and Fluid Minerals practices and procedures for protection of water resources. We also recommend including a discussion of requirements for the adequate bonding of exploration activities to restore the

mining site and repair any road damage that may occur from high runoff events. In addition, we recommend including a discussion and/or map to specify the areas more likely to experience heavy exploration in the future or to be the sites of new mines (we note that Figure 3-22 identifies current active exploration sites). We encourage higher reclamation and bonding standards for exploration and mining in areas that have not been previously mined. Conversely, if the exploration and mining will be in an area with previous mining and incomplete reclamation, we recommend encouraging the proponent to improve reclamation for historic mining activities as part of the permitting process.

Livestock Grazing

We support the development of design criteria to be utilized and refined during site specific analyses, including adaptive management/mitigation and monitoring measures to reduce the potential for impacts to aquatic resources. We recommend that the Final RMP/EIS include an expanded list of BMPs with consideration of the following:

- Management to limit deposition of animal waste in and adjacent to waterbodies, including protecting or repairing any existing exclusions, providing upland water developments, and development of new range improvements to discourage congregation near waterbodies.
- Enhanced monitoring of resource conditions adjacent to high value water resources.
- Monitoring to assess effectiveness of range improvements in protecting aquatic resources.

We recommend that the Final RMP/EIS clarify whether adaptive management techniques would be applied under all alternatives since it currently appears to be discussed only under Alternative B. If adaptive management is included, we recommend that the Final RMP/EIS also identify the features of an effective adaptive management plan that would be utilized at the project level, including the following:

- Achievable and measureable objectives to provide accountability and guide future decisions;
- Specific decision thresholds with identified indicators for each impacted resource;
- Targets that specify a desired future condition;
- Commitment to implement a monitoring plan with protocols to assess whether thresholds are being met;
- Commitment to use monitoring results to modify management strategies as necessary; and
- Designated timeframes for completion of necessary management modifications.

5. Public Drinking Water Supply Sources

The Preferred Alternative D includes fluid minerals leasing stipulations, including NL and CSU, to protect Public Water Supply systems. We support these measures as a strong step forward in protecting these valuable resources.

Note that for groundwater and groundwater under the direct influence of surface water (GWUDI) public drinking water supply sources, we generally recommend a minimum one-half mile (2,640 feet) NSO or

CSU concentric buffer. This recommendation is based on the professional judgment of the CDPHE Source Water Protection Program (SWPP). For additional information, please contact the CDPHE SWPP Coordinator, John Duggan, at 303-692-3534.

To further strengthen the BLM's efforts to protect public drinking water supply sources, we recommend that the Final RMP/EIS Preferred Alternative's Public Water Supply leasing stipulations incorporate either the above EPA recommendation for protection of groundwater and GWUDI public drinking water supply sources or the related stipulations described for Alternatives B/B.1 and noted by the BLM as being more protective of water resources.

6. Water Management and Water Resource Monitoring

Water Management

Water demand associated with mining or the drilling and completion of new wells in the planning area is an important consideration that will benefit from analysis and disclosure in the Final EIS. Although the oil and gas reasonably foreseeable development scenario for the planning area is relatively low over the RMP planning horizon, depletion of surface water in the planning area watersheds may affect major rivers and produced water from oil and gas development may affect groundwater. We recommend that the Final RMP/EIS include a general discussion of the following:

- A range of water demand per well developed in the planning area (based on predicted well depths, formation characteristics, and well designs, as well as hydraulic fracturing operations, if used);
- Possible sources of water needed for oil and gas development; and
- Potential impacts of the water withdrawals (e.g., drawdown of aquifer water levels, reductions in stream flow, impacts on aquatic life, wetlands, and other aquatic resources).

In addition, the EPA recommends the Final RMP/EIS include a general discussion of how flow back and produced water will be managed including:

- Estimated volume of produced water per well;
- Options and potential locations for managing the produced water (i.e., UIC wells, evaporation ponds, and surface discharges);
- Possible target injection formations, formation characteristics and depth of any UIC wells; and
- Potential impacts of produced water management.

The EPA also recommends the BLM encourage operators to consider recycling produced water for use in well drilling and stimulation, thereby decreasing the need for water withdrawals and for produced water management/disposal facilities and minimizing the associated impacts.

Water Resource Monitoring

We fully support the intent of the Draft RMP/EIS Alternatives B and D to require more water resource monitoring than the No Action Alternative in an effort to inform protection of water resources, including

detection of any impacts before they become widespread. We were unable to locate a monitoring plan in the available documents and recommend that one be provided in the Final RMP/EIS. We have identified some specific recommendations below for your consideration.

Fluid Minerals Leasing and Other Surface-Disturbing Activities

The EPA recommends that the Final RMP/EIS address how water quality monitoring in the planning area will occur at the project level prior to, during, and after anticipated development to detect impacts to both surface water and groundwater resources, including private well monitoring. The EPA notes that for groundwater, operators will at a minimum need to conform to the COGCC requirements for pre-development and post-development groundwater monitoring described in Rule 609. As Colorado has no present requirements for surface water pre- and post-development monitoring, the EPA recommends the Final RMP/EIS describe how project-level monitoring will occur to identify any impacts to surface water resources resulting from oil & gas exploration and production. A recent example of a surface and groundwater quality monitoring plan is the "Water Quality Monitoring Plan" developed by the BLM for the Monument Butte Oil and Gas Development Project Final EIS.[4]

Livestock Grazing

We recommend that Section 4.4.2, Livestock Grazing, include a discussion of how monitoring requirements will be applied at the project level to ensure that the BLM Colorado Public Land Health Standards are met. An explanation regarding how the Annual Operating Instructions will ensure compliance with project level monitoring requirements for parameters such as water quality would be helpful. To evaluate and adjust grazing management strategies, we recommend a monitoring section that describes how monitoring will be implemented on an allotment level and watershed or sub-watershed level to determine rangeland conditions including water quality status and trends. A wide array of monitoring options exist, and we are available to discuss the options if desired.

7. Wetlands, Riparian Areas, and Floodplains

Existing Conditions

We recommend that the Final RMP/EIS present inventories and maps of existing wetlands and waters of the U.S. within the planning area, including waters that are regulated under Section 404 of the CWA and wetlands and waters that are protected under Executive Order 11990 – Protection of Wetlands (May 24, 1977). Providing information on existing acreage and functional health of these areas will be a valuable addition to the Final RMP/EIS in order to understand baseline conditions.

Avoidance and Mitigation

It appears that activities approved under the Draft RMP could create adverse impacts to waters of the

[4] Under "Documents" please see Final EIS, Appendix H: http://go.usa.gov/xqjTJ

U.S., including wetlands, due to redundant road crossings, impacts form oil and gas pads (minimum of 1 acre) and grazing impacts from concentrated watering activity. Since BLM-authorized activities in the planning area, including grazing, oil and gas development and mining activities, have the potential to cause changes in hydrology due to surface disturbance, compaction and increased run-off, these changes in hydrology may result in stream structure failure and additional sediment loading of wetlands and riparian areas.

With this in mind, we recommend that the Final RMP/ EIS describe how the BLM intends "to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands" as described in EO 11990, including how wetlands will be identified and avoided, and how unavoidable impacts would be mitigated. Methods to protect wetlands, riparian areas and floodplains, include the following:

- Application of minimum setback requirements through leasing stipulations such as NSO for wetlands and riparian areas. The EPA recommends NSO within the footprint of wetland and riparian areas, as well as a 500 foot NSO setback from wetland and riparian areas (described in the Surface Water Mitigation section of Comment #4 above);
- Leasing stipulations to protect floodplains, such as NSO within the 100-year floodplain (described in the Surface Water Mitigation section of Comment #4 above); and
- Delineation and marking of perennial seeps, springs and wetlands on maps and on the ground prior to project level development to ensure identification of these resources to facilitate their protection.

As noted above under Comment #4, the Preferred Alternative D's proposed increase in planning area acreage subject to restrictions applicable to fluid minerals leasing and other surface-disturbing activities at the project level to protect water resources, including riparian areas, fens, springs and wetlands, represent a significant improvement over the existing requirements. Again, we recommend clarifying Appendix B, stipulation CSU-12 regarding protection of hydrology features under Alternative D to provide the related setback distances from intermittent and ephemeral streams; riparian areas, fens, wetlands; and water impoundments. In addition, we recommend further strengthening these proposed protections by including either (1) the EPA's recommendations identified above or (2) the stipulations described for Alternatives B/B.1 (which the Draft RMP/EIS describes as being more protective of water and riparian/wetland resources).

We also recommend that the Preferred Alternative include special protections from livestock grazing, such as buffer zones for high quality riparian and wetland resources including springs and fens. In addition, we note that 11 grazing allotments were identified as "having problems meeting," or "not meeting," the BLM Colorado Public Land Health Standard 2 (riparian/water quality standard). We support including the full acreage of these affected 11 allotments in the "Improve" management category under the Preferred Alternative D.

Lastly, we support the Preferred Alternative D proposal for several Areas of Critical Environmental Concern (ACEC) that will protect riparian/wetland resources and aquatic species values. We recommend that the BLM consider broadening these protections by including the additional or expanded ACECs related to riparian/wetland values identified under Alternative B (i.e., Dolores Slickrock

Canyon, Roubideau-Potter-Monitor, and San Miguel River Expansion).

Other Issues

Mancos Shale Development Potential

We suggest that the Final RMP/EIS include a discussion regarding how or if the updated development potential of the Mancos Shale in the Piceance Basin, as recently determined by the U.S. Geological Survey, affects reasonably foreseeable development for the planning area. Based on this discussion, it may be necessary to update related sections of the Environmental Consequences chapter. (See Assessment of continuous (unconventional) oil and gas resources in the Late Cretaceous Mancos Shale of the Piceance Basin, Uinta-Piceance Province, Colorado and Utah, 2016: https://pubs.er.usgs.gov/publication/fs20163030.)

Threatened and Endangered Species

The Draft RMP/EIS identifies numerous Endangered Species Act-listed species known to exist or potentially exist in the UFO RMP planning area. We recognize that the BLM will discuss its determinations and findings regarding these species with the U.S. Fish and Wildlife Service (USFWS). Documentation of the USFWS's consultation and recommendations for mitigation and monitoring will be a valuable addition to the Final RMP/EIS.

In addition, given that water consumption and produced water disposal considerations identified in our Comment #6 above could impact four Colorado River endangered fish species, we recommend the Final RMP/EIS describe how the BLM will ensure that future projects will comply with the recovery goals of the Upper Colorado River Endangered Fish Recovery Program.

The EPA's Rating

Based on our review, the EPA is rating Alternative D, the Preferred Alternative, as "Environmental Concerns – Insufficient Information" (EC-2). The "EC" rating means that the EPA's review has identified potential impacts that should be avoided in order to fully protect the environment, including potential impacts to air quality and water quality. The "2" rating means that the Draft EIS does not contain sufficient information for the EPA to fully assess environmental impacts. A description of EPA's rating system can be found at: http://www2.epa.gov/nepa/environmental-impact-statement-rating-system-criteria.

Although we rated Alternative D as the BLM's Preferred Alternative, we recommend that the BLM's decision incorporate either the EPA's additional recommendations for water resource protections (described above) or the water resource protection measures identified under Alternatives B/B.1 since, as noted numerous times in the Draft RMP/EIS, these alternatives provide greater protection of water and wetland/riparian resources in the planning area. Relevant measures that were not part of the Preferred Alternative include additional restrictions applicable to fluid minerals leasing and other surface-disturbing activities (e.g., NL, NSO, CSU, TL, NGD, and SSR) to protect water and

wetland/riparian resources and the additional or expanded ACECs related to riparian resource values.

We appreciate the opportunity to comment on this document and hope our suggestions for improving it will assist you with preparation of the Final RMP/EIS. We would be happy to discuss these comments and our recommendations. If you have any questions, please feel free to contact me at 303-312-6704 or Amy Platt, of my staff, at 303-312-6449 or by email at platt.amy@epa.gov.

Sincerely,

Philip S. Strobel
Director, NEPA Compliance and Review Program
Office of Ecosystems Protection and Remediation